Abstract

Mobile Ad Hoc Network (MANET) offers unique characteristics and application scenarios that create a great research attention recently. Designing an efficient and robust routing protocol is a challenging task and crucial to the core network operations owing to the dynamic properties of the MANET. The robustness of the routing protocol is an essential feature that adapts well to the dynamic changes in the network environment. A variety of routing protocols has been proposed depending on the network scenarios and applications. The routing protocols designed for MANET has individual and unique characteristics. The performance evaluation significantly determines the efficiency and robustness of the routing protocols used in a specific network scenario. Considering the significance of routing performance, this research work evaluates routing performance of proactive, reactive and hybrid routing protocols under various simulation scenarios to obtain the exact performance useful for different network conditions and application scenarios. This paper evaluates the performance evaluation of routing protocols such as AODV, DSR, LAR, DSDV, OLSR, FSR, and ZRP under different network scenarios for achieving the identical result to the realistic context. In realistic MANET, several factors such as node density,
dynamic topology, and traffic influence the routing protocol performance and a single routing protocol unlikely to attain better performance under all scenarios. Therefore, it is crucial to consider many factors in clearly understanding the distinct characteristics of a routing protocol and estimating its relationship with others. This work analyzes the efficiency of routing protocols using different network scenarios under mobility of nodes using ns2 network simulation tool. As in the simulation results under the mobility scenario, the DSDV exhibits attractive performance under TCP traffic irrespective of speed.

References

2. de Morais Cordeiro, Carlos, and Dharma P. Agrawal, "Mobile ad hoc networking", Center for Distributed and Mobile Computing, ECECS, University of Cincinnati, pp. 1-63, 2002.

Index Terms

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Keywords

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